



Form PTO 1449		
ATTY DOCKET NO. 6-96C	SERIAL NO. 09/724,308	FILING DATE: November 28, 2000
APPLICANT Weigl, et al.		GROUP: 1743

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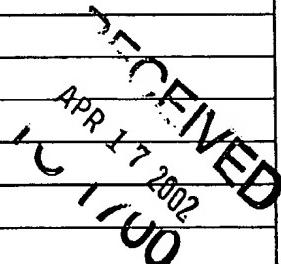
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<i>Jo</i>		5,389,523	2/14/95	Plant, et al.	33	543	

FOREIGN PATENT DOCUMENTS

		Document Number	Date	Country	Class	Subclass	Translation Yes/No
<i>Ot</i>		WO 95/27211	12.10.95	PCT	G01N 35	08	
<i>Ot</i>		0 345 782 A2	13.12.89	EP	G01N 30	00	

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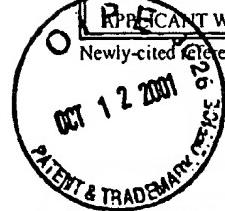


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Newly-cited References

**U.S. PATENT DOCUMENTS**

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FOREIGN PATENT DOCUMENTS

		Document Number	Date	Country	Class	Subclass	Translation Yes/No

OTHER PRIOR ART (including Author, Title, Date, Pertinent Pages, etc.)

<i>Ja</i>		Manz, A. et al. "Electroosmotic Pumping and Electrophoretic Separations for Miniaturized Chemical Analysis System" (1994) <i>J. Micromech. Microeng.</i> , 4:257-265
<i>M</i>		Miyake, R. et al. "A Development of Micro Sheath Flow Chamber" in <i>Proceedings of the IEEE Micro Electro Mechanical Systems Workshop</i> (1991) Nara, Japan, pp 265-270
EXAMINER <i>Q.S.</i>		DATE CONSIDERED 3-5-04

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Sheet 1 of 1

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ATTY DOCKET NO. 6-96C	SERIAL NO. 09/724,308	FILING DATE November 28, 2000
APPLICANT Weigl et al.		GROUP 1743

JUN 22 2001

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Newly-cited references

U.S. PATENT DOCUMENTS

Exmr. Initial		Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate
<i>Q</i>		6,159,739	12/12/00	Weigl et al.	436	52	
<i>Q</i>		5,747,349	05/05/98	van den Engh et al.	436	172	

FOREIGN PATENT DOCUMENTS

	Document Number	Date	Country	Class	Subclass	Translation Yes/No

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Sheet 1 of 6

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Previously cited references

U.S. PATENT DOCUMENTS

Exmr. Initial		Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate
<i>js</i>		3,449,938	06/17/69	Giddings	73	23	
		3,795,489	03/05/74	Warnick et al.	23	254 R	
		4,147,621	04/03/79	Giddings	210	22 C	
		4,214,981	07/29/80	Giddings	209	155	
		4,250,026	02/10/81	Giddings et al.	209	155	
		4,683,212	07/28/87	Uffenheimer	436	52	
		4,726,929	02/23/88	Gropper et al.	422	68	
		4,737,268	04/12/88	Giddings	209	12	
		4,756,884	07/12/88	Hillman et al.	422	73	
		4,830,756	05/16/89	Giddings	210	739	
		4,894,146	01/16/90	Giddings	209	12	
		4,908,112	03/13/90	Pace	204	299	
		5,007,732	04/16/91	Ohki et al.	356	73	
		5,039,426	08/13/91	Giddings	210	695	
		5,141,651	08/25/92	Giddings	210	748	
		5,156,039	10/20/92	Giddings	73	1 R	
		5,193,688	03/16/93	Giddings	209	155	
		5,240,618	08/31/93	Caldwell et al.	210	748	
		5,250,263	10/05/93	Manz	422	81	
		5,288,463	02/22/94	Chemelli	422	58	
		5,304,487	04/19/94	Wilding et al.	435	291	
		5,322,626	06/21/94	Frank et al.	210	634	
		5,389,524	02/14/95	Larsen et al.	435	29	
<i>js</i>		5,465,849	11/14/95	Wada et al.	209	214	

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Sheet 2 of 6

Form PTO 1449

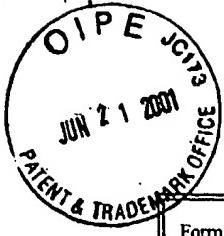
ATTY DOCKET NO. 6-96C	SERIAL NO. 09/724,308	FILING DATE November 28, 2000
APPLICANT Weigl et al.		GROUP 1743

Previously cited references

20	5,480,614	01/02/96	Kamahori	422	70	
	5,599,432	02/04/97	Manz et al.	204	451	
	5,599,503	02/04/97	Manz et al.	422	82.05	
	5,637,469	06/10/97	Wilding et al.	435	7.21	
	5,635,358	06/03/97	Wilding et al.	435	7.2	
	5,498,392	03/12/96	Wilding et al.	422	68.1	
	5,549,819	08/27/96	Nickerson	210	511	
	5,534,328	07/09/96	Ashmead et al.	210	97	
	5,554,339	09/10/96	Cozzette et al.	422	69	
	5,571,410	11/05/96	Swedberg et al.	422	69	
	5,585,011	12/17/96	Saaski et al.	216	56	
	5,585,069	12/17/96	Zanzucchi et al.	422	100	
	5,587,128	12/24/96	Wilding et al.	435	287.3	
	5,603,351	02/18/97	Cherukuri et al.	137	597	
	5,605,662	02/25/97	Heller et al.	422	69	
	5,618,432	04/08/97	Rewitzer et al.	210	634	
	5,632,957	05/27/97	Heller et al.	422	69	
	5,639,423	06/17/97	Northrup et al	435	287.3	
	5,674,743	10/07/97	Ulmer	435	287.2	
	5,681,484	10/28/97	Zanzucchi et al.	216	56	
	5,707,799	01/13/98	Hansmann et al.	435	6	
	5,716,852	02/10/98	Yager et al.	436	172	
20	5,726,751	03/10/98	Altendorf et al.	356	246	

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Sheet 3 of 6

Form PTO 1449

ATTY DOCKET NO. 6-96C	SERIAL NO. 09/724,308	FILING DATE November 28, 2000
APPLICANT Weigl et al.		GROUP 1743

Previously cited references

✓	5,842,787	12/01/98	Kipf-Sill et al.	366	340	
✓	5,869,004	02/09/99	Parce et al.	422	100	
✓	5,932,100	08/03/99	Yager et al.	210	634	
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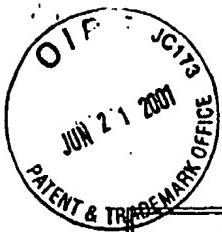
FOREIGN PATENT DOCUMENTS

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✓		WO97/00125	03.01.97	PCT	B01F 5/06		
✓		WO96/15576	23.05.96	PCT	H92K 44/02		
✓		WO96/12541	02.05.96	PCT	B01D 11/04		
✓		WO96/12540	02/05/96	PCT	B01D 11/04		
✓		WO96/04547	15.02.96	PCT	G01N 27/00		
✓		WO93/22421	11.11.93	PCT	C12M 3/00		
✓		WO93/22058	11.11.93	PCT	B01L 7/00		
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✓		WO93/22053	11.11.93	PCT	B01L 3/00		
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✓		0 381 501 A2	08.08.90	EP	B01L 3/00		
✓		0 645 169 A1	29.03.95	EP	B01D 21/00		

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Previously cited references

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JUN 22 2001

TC 1705

OTHER PRIOR ART (including Author, Title, Date, Pertinent Pages, etc.)

<i>JS</i>		Afromowitz, M.A. and Samaras, J.E., (1989), "Pinch Field-Flow Fractionation Using Flow Injections Techniques," <i>Separation Science and Technology</i> 24(5&6):325-339
		Brody, J.P. and Yager, P. (June 1996), "Low Reynolds Number Micro-Fluidic Device," <i>Solid State Sensor & Actuator Workshop, Hilton Head, SC, June 2-6</i> , pp. 105-108
		Chmelik et al., (1991), "Isoelectric focusing field-flow fractionation," <i>J. Chromatography</i> 545(2):349-358
		Elwenspoek et al., (Dec 1994), Towards, Integrated Microliquid Handling Systems," <i>J. Micromech. Microeng.</i> 4:227-245
		Faucheu, L.P. et al. (Feb 1995), "Optical Thermal Ratchet," <i>Phys. Rev. Letters</i> 74:1504-1507
		Forster et al., (Nov 1995), "Design, Fabrication and Testing of Fixed-Valve Micro-Pumps," <i>Proceeding of the ASME Fluids Engineering Division, ASME. FED</i> 235:39-44
		Fu et al., (1993), "Rapid Diffusion Coefficient Measurements Using Analytical SPLITT Fractionation: Application to Proteins," <i>Anal. Biochem.</i> 208:80-87
		Gravesen et al., (1993), "Microfluidics - a review," <i>J. Micromechanics and Microengineering</i> 3:168-182
		Giddings, J.C., (1988), "Continuous Separation in Split-Flow Thin (SPLITT) Cells: Potential Applications to Biological Materials," <i>Sep. Sci. Technol.</i> 23(8,9):931-943
		Giddings, J.C. (1985), "Optimized Field-Flow Fractionation System Based on Dual Stream Splitters," <i>Anal. Chem.</i> 57:945-947
		Giddings, J.C. et al. (1983), "Outlet Stream Splitting for Sample Concentration in Field-Flow Fractionation," <i>Separation Science & Technology</i> 18:293-306
		Giddings, J.C. (June 1993), "Field-Flow Fractionation: Analysis of Macromolecular, Colloidal and Particulate Materials," <i>Science</i> 260:1456-1465
		Harrison et al., (Aug 1993), "Micromachining a miniaturized capillary electrophoresis-based chemical analysis system on a chip," <i>Science</i> 261:895-897
		Kittilsand, G. and Stemme, G., (1990), "A Sub-micron Particle Filter in Silicon," <i>Sensors and Actuators A</i> 21-A23:904-907
<i>JS</i>		Leff, H.S. and Rex, A.F. (Mar 1990), "Resource letter MD-1: Maxwell's demon," <i>Am. J. Physics</i> 58:201-209

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Sheet 5 of 6

Form PTO 1449

ATTY DOCKET NO. 6-96C

SERIAL NO. 09/724,308

FILING DATE November 28, 2000

APPLICANT Weigl et al.

GROUP 1743

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JUN 22 2001
TC 1701

Previously cited references

<i>DS</i>		Levin, S. and Tawil, G., (Sept 1993), "Analytical SPLITT Fractionation in the Diffusion Mode Operating as a Dialysis-like system Devoid of Membrane. Application to Drug-Carrying Liposomes," <i>Anal. Chem.</i> 65:2254-2261
<i>DS</i>		Manz, A. et al. (1993), "Planar Chips technology for miniaturization of separation systems: A developing perspective in chemical monitoring," <i>Advances in Chromatography</i> 33:1-66
<i>DS</i>		Petersen, K.E. (May 1982), "Silicon as a Mechanical Material," <i>Proc. IEEE</i> 70(5):420-457
<i>DS</i>		Ramsey et al., (Oct 1995), "Microfabricated chemical measurement systems," <i>Nature Medicine</i> 1(10):1093-1096
<i>DS</i>		Reisman, A. et al. (1979) "The Controlled Etching of Silicon in Catalyzed Ethylenediamine-Pyrocatechol-Water Solutions," <i>J. Electrochem. Soc.</i> 126:1406-1415
<i>DS</i>		Rousselet, J. et al. (Aug 1994), "Directional motion of brownian particles induced by a periodic asymmetric potential," <i>Nature</i> 370:446-448
<i>DS</i>		Shoji, S. and Esashi, M. (Dec 1994), "Microflow devices and systems," <i>J. Micromechanics and Microengineering</i> 4:157-171
<i>DS</i>		Springston et al., (1987), "Continuous Particle Fractionation Based on Gravitational Sedimentation in Split-Flow Analytical Chemistry," <i>Analytical Chemistry</i> 59:344-350
<i>DS</i>		Verpoorte et al., (Dec 1994), "Three-dimensional micro flow manifolds for miniaturized chemical analysis systems," <i>J. Micromech. Microeng.</i> 4:246-256
<i>DS</i>		Wallis, G. and Pomerantz, D.I. (Sept 1969) "Field Assisted Glass-Metal Sealing," <i>J. Appl. Physics</i> 40:3946-3949
<i>DS</i>		Weigl, B.H. and Yager, P. (Apr 1996), "Silicon-Microfabricated Diffusion-Based Optical Chemical Sensor," presented at Europrobe Conference, Zurich, Switzerland, April 2-3
<i>DS</i>		Weigl, B.H. et al. (Feb 1997), "Fluorescence and absorbance analyte sensing in whole blood and plasma based on diffusion separation in silicon-microfabricated flow structures," SPIE Proceedings, J. Lakowitz (ed.), <i>Fluorescence Sensing Technology III</i> (Feb. 9-11)
<i>DS</i>		Weigl, B.H. et al. (Nov 1996), "Diffusion-Based Optical Chemical Detection in Silicon Flow Structures," <i>Analytical Methods & Instrumentation Special Issue μTAS 96</i> , pp. 174-184
<i>DS</i>		Weigl, B.H. et al. (Nov 1996), "Rapid sequential chemical analysis in microfabricated flow structures using multiple fluorescent reporter beads," <i>μTAS 96</i> (Nov' 96)

DS

3-5-04



Sheet 6 of 6

Form PTO 1449

ATTY DOCKET NO. 6-96C	SERIAL NO. 09/724,308	FILING DATE November 28, 2000
APPLICANT Weigl et al.		GROUP 1743

Previously cited references

W		Wilding et al., (Jan 1994), "Manipulation and Flow of Biological Fluids in Straight Channels Micromachined in Silicon," <i>J. Clin. Chem.</i> 40(1):43-47
W		Williams, P.S. et al. (1992), "Continuous SPLITT Fractionation Based on a Diffusion Mechanism," <i>Ind. Eng. Chem. Res.</i> 31:2172-2181
W		Yue et al., (Sept 1994), "Miniature Field-Flow Fractionation Systems for Analysis of Blood Cells," <i>Clin. Chem.</i> 40:1810-1814

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DATE CONSIDERED

3-5-04

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